A 256

COST and MANAGEMENT

Published Monthly
by

THE SOCIETY OF INDUSTRIAL & COST ACCOUNTANTS OF CANADA

SERVIRE EDUCARE INQUIRERE

MAY - 1949

THE SOCIETY OF INDUSTRIAL AND COST ACCOUNTANTS OF CANADA

OFFICERS 1948-49

President: D. R. Harrison, R.I.A., Port Arthur Evening News Chronicle, Port Arthur.
1st Vice-President: Chas. P. Dumas, M.C.I., R.I.A., Canadian Credit Men's Trust Association, Montreal.
2nd Vice-President: Norman Terry, C.G.A., R.I.A., Canadian Sumner Iron Works Ltd., Vancouver.
3rd Vice-President: J. B. Tennant, R.I.A., Webster Motors (Windsor) Ltd., Windsor.
Honorary Secretary: H. W. Blunt, C.A., R.I.A., Stevenson, Walker, Knowles & Co., Montreal.
Honorary Treasurer: J. B. Whelihan, R.I.A., Northwestern Utilities Ltd., Edmonton.
Secretary-Manager: J. N. Allan, R.I.A.

OFFICERS OF AFFILIATED PROVINCIAL SOCIETIES

1948-49

THE SOCIETY OF INDUSTRIAL AND COST ACCOUNTANTS OF QUEBEC

President: C. P. Dumas, M.C.I., R.I.A., Can. Credit Men's Trust Ass'c., Montreal.
1st Vice-President: R. Query, R.I.A., Le Soleil Ltee., Quebec City.
2nd Vice-President: H. W. Blunt, C.A., R.I.A., Stevenson, Walker & Knowles & Co., Montreal.
Secretary: D. J. B. Peddie, R.I.A., Shawinigan Chemicals Ltd., Shawinigan Falls.
Treasurer: H. J. Moffatt, Hall Machinery Co. of Can. Ltd., Sherbrooke, Que.
Ass't. Secretary-Treasurer and Registrar: G. B. Clarke, Haskell Elderkin & Co., Montreal.

THE SOCIETY OF INDUSTRIAL AND COST ACCOUNTANTS OF ALBERTA

President: T. R. Humphries, R.I.A., Alberta Wheat Pool, Calgary.
1st Vice-President: G. S. Perring, R.I.A., Gainers Ltd., Edmonton.
2nd Vice-President: D. J. Brownrigg, R.I.A., Advance Lumber Co. Ltd., Lethbridge.
Secretary: W. J. Mack, R.I.A., Shell Oil Co. of Can. Ltd., Calgary.
Treasurer: J. H. Miller, R.I.A., Canadian Natural Gas, Light, Heat & Power Co., Calgary.
Registrar: F. H. Ougden, R.I.A., General Supplies Ltd., Calgary.

THE SOCIETY OF INDUSTRIAL ACCOUNTANTS OF BRITISH COLUMBIA

President: V. E. Feimann, C.G.A., R.I.A., B.C. Bridge & Dredging Co. Ltd., Vancouver.
1st Vice-President: T. Taylor, R.I.A., Dominion Treasury Dept., Vancouver.
Secretary: C. H. Davis, R.I.A., Public Accountant, 3538 W. 34th Ave., Vancouver.
Treasurer: T. K. Milne, R.I.A., Canadian Fishing Co., Vancouver.
Registrar: E. B. Tait, R.I.A., Pacific Lime Co. Ltd., Vancouver.

THE SOCIETY OF INDUSTRIAL AND COST ACCOUNTANTS OF MANITOBA

President: G. H. Elliott, R.I.A., Commonwealth Construction Co. Ltd., Winnipeg.
1st Vice-President: J. H. Smith, R.I.A., Hudson's Bay Co. Ltd., Winnipeg.
2nd Vice-President: D. J. Campbell, R.I.A., Thornton, Milne & Campbell, Winnipeg.
Secretary: V. C. Nix, R.I.A., McFadyen Co. Ltd., Winnipeg.
Treasurer: W. G. Dunbar, C.A., R.I.A., Sharp, Woodley & Co., Winnipeg.

THE SOCIETY OF INDUSTRIAL AND COST ACCOUNTANTS OF ONTARIO

President: S. E. Nicholson, C.A., R.I.A., Sheldon's Ltd., Galt.
1st Vice-President: J. B. Tennant, R.I.A., Webster Motors (Windsor) Ltd., Windsor.
2nd Vice-President: R. H. Metcalfe, R.I.A., Massey-Harris Co. Ltd., Toronto.
Hon. Secretary: J. S. Benson, R.I.A., Andrew Jergens Co. Ltd., Perth.
Hon. Treasurer: O. W. Cox, R.I.A., Omer W. Cox & Co., Windsor.
Secretary-Treasurer: J. N. Allan, R.I.A., 66 King Street East, Hamilton.

THE SOCIETY OF INDUSTRIAL AND COST ACCOUNTANTS OF SASKATCHEWAN

President: A. Stewart, R.I.A., Burns & Co. Ltd., Regina.
Vice-President: A. J. Newmark, R.I.A., Rex Fruit Wholesale, Moose Jaw.
Secretary-Treasurer: R. B. Van Iderstine, R.I.A., The Leader-Post Ltd., Regina.

COST *and* MANAGEMENT

THE OFFICIAL JOURNAL OF

THE SOCIETY OF

INDUSTRIAL AND COST ACCOUNTANTS OF CANADA

Telephone 2-0700

Incorporated 1920

HEADQUARTERS: 200 MACKAY BUILDING

66 KING STREET EAST, HAMILTON

J. N. Allan, R.I.A., Secretary-Manager and Editor

VOL. XXIII MAY No. 5

. . CONTENTS . .

SOCIETY NOTES 138
NEW MEMBERS 140
CONVENTION NOTES 141
CHAPTER NOTES 142
CURRENT LITERATURE DIGEST 148
AN ACCOUNTANT'S VIEWPOINT ON DEPRECIATION OF FIXED ASSETS 151
DIFFERENTIAL COSTS 158
STUDENTS SECTION 170

Subscription price to non-members, $5 per year. Single copies, 50 cents. Members desiring five copies or more of a single issue may obtain them at 25 cents each. Authorized as second class mail, Post Office Department, Ottawa.

SOCIETY NOTES

WESTERN CHAPTERS PREPARING FOR RECEPTION AND ENTERTAINMENT OF DELEGATES TO ANNUAL MEETING

As previously announced, the itinerary of the Eastern delegates to the Annual Meeting has been arranged to provide a stop-over at each Chapter point enroute, and the members of each Chapter are making elaborate preparations for their reception and entertainment.

The following are the programmes tentatively arranged by four of the Western Chapters. Regina and Fort William-Port Arthur were not quite finalized at time of going to press.

SATURDAY—July 2nd—EDMONTON

9.15 a.m. M.D.T.	Arrive by C.N.R.
9.45 a.m.	Breakfast—Seven Seas Restaurant
12.30 Noon	Luncheon—MacDonald Hotel—Guests of the Edmonton Chapter. Speaker—His Lordship, Mayor Ainlay
2.30 p.m.	Tour of the Leduc Oilfield
7.00 p.m.	Dinner and Entertainment

SUNDAY—July 3rd

8.20 a.m.	Leave by C.N.R.
2.15 p.m.	Arrive Jasper Tour
3.55 p.m. P.D.T.	Leave Jasper

MONDAY—July 5th—VANCOUVER

9.20 a.m. M.S.T.	C.N.R. Train arrives Vancouver
9.00 a.m.—10.00 a.m.	Transportation to Hotel Vancouver—Pacific States private bus.
10.00 a.m.—12.00 Noon	Free time—Suite, Hotel Vancouver, Convention Headquarters
12.00 Noon—2.00 p.m.	Luncheon, Hotel Vancouver, arranged by B.C. Provincial Council
2.00 p.m.— 6.00 p.m.	Free Time—Shopping, Golf, etc.
6.00 p.m.	Special Pacific States Bus leaves Hotel for Stanley Park Pavilion
6.15 p.m.— 8.15 p.m.	Dinner, Stanley Park Pavilion, arranged by Vancouver Chapter
8.30 p.m.—10.30 p.m.	"Theatre Under the Stars" (open air operetta) Stanley Park

10.30 p.m.—11.00 p.m.	Special bus to transport from Stanley Park to Victoria Boat
11.45 p.m.	C.P.R. boat leaves Vancouver for Victoria

TUESDAY—July 6th—VICTORIA

7.00 a.m.	C.P.R. boat arrives at Victoria
8.00 a.m.— 9.00 a.m.	Breakfast on board boat
9.00 a.m.	Check baggage for return trip at C.P.R. wharf, Victoria
9.00 a.m.— 2.00 p.m.	Free time — Convention Headquarters — Empress Hotel, Victoria
2.00 p.m.— 6.00 p.m.	Scenic sightseeing bus, famous Victoria Butchardt Gardens, etc.
6.00 p.m.—10.00 p.m.	Dinner and entertainment, Victoria Chapter
11.00 p.m.	C.P.R. boat leaves Victoria for Vancouver

WEDNESDAY—July 7th—VANCOUVER

7.00 a.m.	C.P.R. boat arrives at Vancouver
8.00 a.m.— 9.00 a.m.	Breakfast on board boat
9.00 a.m.	Check baggage at wharf for C.P.R. train to Banff
9.30 a.m.	Special bus to transport delegates to Hotel Vancouver N.B. Hotel Vancouver, Convention Headquarters
10.00 a.m.	Sightseeing bus leaves Hotel Vancouver for Vancouver beauty spots
1.00 p.m.	Luncheon at Whytecliff Park on bus trip
3.00 p.m.	Bus returns to Hotel Vancouver
3.00 p.m.— 6.30 p.m.	Free Time
6.30 p.m.	Bus leaves Hotel Vancouver for C.P.R. depot, and Banff train

THURSDAY—July 14th—WINNIPEG

9.50 a.m. C.D.T.	Arrive by train—C.P.R.
10.45 a.m.—12.45 p.m.	City tour by bus
1.00 p.m.	Dinner—Gentlemen—Guests of H.B.C. Talk by Mr. Don Patton
1.00 p.m.	Dinner—Ladies—Guests of H.B.C. Hostess—Mrs. J. H. Smith Talk by Mrs. Ruth Matheson
2.30 p.m.— 3.15 p.m.	Visit H.B.C. and Historical Exhibit
3.15 p.m.	Leave H.B.C. for Great-West Life Ass'ce Co.
3.30 p.m.	(a) Tour of Great-West Life Ass'ce Co.
4.30 p.m.	(b) Tea—Guests of Great-West Life
5.30 p.m.— 6.00 p.m.	Return to Royal Alexandra Hotel
8.30 p.m.	Leave by C.P.R. train

New Members

Bay of Quinte

C. R. Hewson, 329½ Front Street, Belleville

Calgary

E. R. Beatty, 2101 6th Avenue North West, Calgary

Hamilton

F. J. Cooke, The Studebaker Corp. of Canada, Ltd.
G. M. Laing, The Studebaker Corp. of Canada, Ltd.
J. A. Nixon, 319 Caroline Street South

Kitchener

H. H. Good, R.R. No. 3, Waterloo

Montreal

W. St. Pierre, Aluminium Securities Limited, 2100 Sun Life Building
J. G. Richard, P. S. Wise and Company, 407 McGill Street
G. M. Drodge, 6285 8th Avenue, Apt. 3, Rosemount
J. Drapeau, 312 Mercille Avenue, St. Lambert
R. Collette, 1325 Girouard St., St. Hyacinthe

New Westminster

G. F. Prentice, 742 18th Avenue

Non-Resident Ontario

W. A. Campbell, 286 Lynn St., Renfrew

Ottawa

I. M. Alexander, 99 Carling Ave.
R. S. VanWart, 50 Elliott Street

Toronto

E. G. Burnside, C.A., c/o Hill Teskey & Co., 159 Bay Street
J. C. Campbell, 552 Melrose Avenue
L. W. Naylor, 77 Madison Ave.
J. H. Suydam, Canadian Credit Men's Trust Assoc. Ltd.
J. G. Glassco, F.C.A., R.I.A., 15 Wellington St. West

Vancouver

I. H. Bell, 717-744 West Hastings St.
M. MacLean, Clarke Simpkins Ltd., 999 Seymour St.
Miss Amy Trenholme, 1254 Melville St.

Victoria

S. Fridfinnson, 718 14th Ave. N., Port Alberni

Non-Resident Alberta

W. Barbeau, Sinclair Mills, B.C.

Personals

Mr. A. W. Babcock, R.I.A., was recently appointed Comptroller of the Rodgers Majestic Ltd. and Rodgers Electronic Tubes Ltd. Mr. Babcock has been with the Company since 1938 and is a member of the Toronto Chapter.

Convention Notes

WELCOME TO BANFF

Here It Is—The Biggest Convention of Them All

Prepare yourselves for a wonderful time at this biggest of Dominion Annual Meetings. The Alberta Society and the Calgary Chapter extend a warm welcome to all visitors from the east or west. Come early and get in on all the fun. Remember these dates—July 8th to 10th. The eastern delegates travelling by train in special coaches will arrive from the west coast on Thursday evening, July 7th. The next three days will be jam packed full of interesting meetings, banquets and relaxation to suit the individual tastes of all who attend. Programme details are rapidly being finalized and will be available to everyone well in advance of the convention. Of course, the climax to the convention will be a full day in Calgary to witness the world-famous stampede.

The Alberta Society and the three Alberta Chapters as hosts are looking forward to your visit. We promise something new and different in western hospitality. Get your "Registration Questionnaire" completed without further delay and forward same to Mr. Walter Nobbs, 1208 Tenth Street West, Calgary, Alberta.

THE GREATEST SHOW ON EARTH

Calgary—the Stampede City—once a year puts on the garb of yesteryear and, with all the enthusiasm for which it is famous, recalls and relives pioneer days. Calgary puts on a show which attracts more visitors than any other such show—over 367,000 last year.

The Stampede is something more than the greatest show on earth —it is a spirit which imbues the minds not only of Calgarians but also of the visitor. The Spirit of Stampede must be experienced—we cannot describe it.

From early Monday morning, July 11, to early Sunday morning, July 17, the Stampede takes over. The parade which opens the week depicts life as it used to be in this area—it sets the tempo for the remainder of the week; the Calgary exhibition of industrial and farm equipment, fat stock animals, handicrafts, etc., is one of the finest of its kind; the Indian village and the post and museum of the Royal Canadian Mounted Police are favorite targets of the camera fan; the famous Stampede Post Office whose cachet is prized by stamp collectors; the midway, starring Gypsy Rose Lee; the rides and side shows; these may be considered the ordinary appurtenances of an exhibition or rodeo. Wait till you take your seat in the grandstand for the afternoon and evening performances!

You will see a world's champion broncobuster take his turn on the hurricane deck of an outlaw horse and bite the dust or stay on top for the allotted time. You will see the thrilling steer decorating contest which has replaced bull-dozing on Canadian shows. You will see the pick of Canadian and American cowboys competing in the steer-

riding contest and the comedy act put on by Slim Pickens whose job it is to distract the attention of enraged Brahma bulls from fallen cowboys. You will see top hands pit their skill in calf-roping against all comers. You will see the wild cow-milking contest. You may wish to take part in the sport of kings and test your luck at the pari-mutuels against Canada's top thoroughbreds in seven races daily. These and other attractions will be on the bill of fare Monday afternoon.

Wait! The greatest thrill is yet to come. The Rangeland Derby—the famous Chuck Wagon Race—opens the evening performance. Without a shadow of a doubt this will send you away muttering to yourself. It is the thrill of thrills. The grandstand show and fire works display and a trip through the midway complete a day at the Stampede.

Calgary extends to all an invitation to take part in its Stampede. Western hospitality will be yours whether you stay at the Palliser bunk house or in your own chuck wagon.

THE CALGARY STAMPEDE

—Yippee—

Chapter Notes

BAY OF QUINTE

The regular monthly dinner meeting of the Bay of Quinte Chapter was held in the premises of the Belleville Shrine Club Monday, April 18th, at 6.30 p.m.

The 23 members and guests present thoroughly enjoyed their "Premier" at this new location.

The speaker of the evening, Mr. George Brooks, C.A., Controller of Stewart-Warner-Alemite Corporation of Canada Ltd., was formally introduced by Lee Lennox after the business portion of the Chapter was completed. Mr. Brook's topic, "Budgetary Control", was of particular interest to those present. Budgetary Control, he emphasized, gives management and department heads a foresight of the trends of a business, a chart to follow, a forecast of dangers and reefs ahead, applies a sales dollar equitable, points out cost fluctuations, gives break-even point and inventory control. All this, at a time when management can do something about it.

Budgetary Control puts the head of each department in the position of a manager of a small business. Each has control of certain expenses and income of the operation of his department whether it be tool room, production department or sales department.

Mr. Brooks stipulated the five major steps in setting up a satisfactory Budgetary Control as follows:

1. Historical Facts.
2. Comparison of Historical Facts.
3. Analysis of resulting Comparisons.
4. Projection of Comparison trends.
5. Correlation of acquired Facts to Sales Projection.

Mr. Brooks supported his talk with an actual Operating Budget Analysis in report form, compiled from the records of a theoretical X.Y.Z. Company Limited, of which a copy was given to each member and guest. This report was the object of many questions and answers following his talk.

CALGARY

The Chapter held its annual Ladies' Night at the Renfrew Club, Wednesday, April 27th, when a large gathering of the members and guests were present for dinner and an evening of dancing and entertainment.

The Calgary Chapter will conclude its activities for this season on May 21st when the Annual General Meeting of the Society of Industrial and Cost Accountants of Alberta will be held in Calgary, with members from the Edmonton and Lethbridge Chapters joining with the Calgary Chapter for the meeting.

Recently the Calgary Chapter entertained the first year lecture students at a banquet held on Friday, April 22nd. It is hoped that next year this banquet will be extended to include students of both first year and second year courses of the Society. Mr. T. R. Humphries, R.I.A., the Alberta Educational Secretary, and J. H. Cooper, R.I.A., Chairman of Calgary Chapter, Students Advisory Committee. Mr. Ross Powell, one of the University of Alberta instructors, addressed the students.

LONDON

The April meeting of London Chapter Ontario Society of Industrial and Cost Accountants was held on the evening of the 28th day of the month, in the Public Library Building, Mr. L. W. Bennett, R.I.A., chairman presiding.

The speaker of the evening, Mr. A. J. Little, C.A., of Clarkson, Gordon & Company, was introduced by Mr. C. E. Costain, R.I.A.

Mr. Little's subject, "Some Phases of Taxation Under the New Budget", was well received and discussed by members and visitors present.

After the address and discussion the speaker was thanked on behalf of the Chapter by Mr. M. J. McBain, R.I.A.

OTTAWA

The Annual General Meeting of the Ottawa Chapter—Society of Industrial and Cost Accountants of Ontario was held Thursday evening, the 21st April, 1949, in the Staff House of the E. B. Eddy Company, and the reports of the various officers were received and approved. Election of officers for the 1949-1950 season was held, and Cliff B. Watt, R.I.A., was elected President. Other officers are: Vice-president, Major R. B. Strange, R.I.A.; B. H. Breckenridge, Secretary; Miss Dorothy Craig, Treasurer; Director of Publicity and Public Relations, R. Query, C.A., R.I.A.; Membership, Lawrence Connor; Programs and Meetings, Dr. A. A. Sterns, P. J. Nolan and Norman Wrigglesworth, R.I.A. It was announced that the Ottawa Chapter will

be hosts to the Annual Ontario Convention on the 27th and 28th May, 1949, in Ottawa.

PETERBOROUGH

Mr. J. H. Turner, C.A., of McColl and Turner, Chartered Accountants, addressed the local Chapter of the Society of Industrial and Cost Accountants at their regular monthly meeting. (April 25, 1949). His subject was "Auditing".

Mr. Turner discussed the legal requirements and the purposes of shareholders' audit as distinguished from the variety of other audits which are necessary and common in business today. He pointed out that all audit work culminates in the report, and that all verification has in view, the preparation and presentation of a clear report. He referred to the practice of casual dismissal of the reading of the audit report due to the feeling the report form is rigid and hackneyed. He said such reading is necessary to indicate whether the report is clear, or qualified.

Possibility of defalcations form a background on which the auditor must of necessity pattern his work, since he must be on guard at all times. Mr. Turner emphasized the necessity of a complete appreciation by the auditor of the adequacy of internal check within the system under audit, and how this should influence the extent of his work.

He dealt briefly with such subjects as inventory valuation, depreciation, and bad debt reserves. The dependence of the auditor upon certification by management values and accuracy of inventory was admitted as acceptable practice. Possibility of changes in depreciation accounting under new government regulations was touched upon in the question and answer period which followed the meeting.

Mr. Gordon Langhorne introduced the speaker and Mr. Blake Bell expressed the Chapter's thanks for an interesting talk.

The following Chapter members were nominated for the Board of Directors:

A. Pitchford, A. H. Cocks, C. R. Payne, A. Purdon, D. Harwood, E. H. Jones, R. Aman, G. Langhorne, S. R. Adamson, G. Cheatle, L. Bearne.

REGINA-MOOSE JAW

The Regina-Moose Jaw Chapter of the Society of Industrial and Cost Accountants of Saskatchewan, held their first annual meeting on April 28th in the Regina College Building, Regina, with a very good turnout of members. The guest speaker of the meeting was Mr. M. A. MacPherson, K.C., well known Regina barrister, who gave a very informative and inspiring talk to the members as accountants "See Yourselves as Others See You". Mr. MacPherson's talk emphasized the increasing importance of accountants and auditors in business to-day. The members appreciated this talk very much and the speaker has been asked to speak again at some future date. The theme of his talk was that the accountants and auditors might now be classified as specialists just the same as lawyers or doctors and are called in for consultation at all vital conferences.

CHAPTER NOTES

The Chapter Council for the coming year was elected at this general meeting. The following members to serve for the year 1949-1950: W. T. Read, C.A., R.I.A., E. A. Fowle, R.I.A., J. H. Grismer, R.I.A., A. L. Heggie, R.I.A., W. J. Arnall, R.I.A., to represent the Regina members, and D. F. J. Flagel, R.I.A., J. P. Golds, R.I.A., R. A. Kennedy, R.I.A., G. T. Lane, R.I.A., to represent the Moose Jaw members.

The March meeting of the Regina-Moose Jaw Chapter was held in Regina College Building, Regina, on the 24th of March. The speakers of the evening were Mr. E. C. Leslie, K.C., well-known Regina barrister, and Mr. C. M. Killam, manager of The Bank of Nova Scotia, Regina.

Mr. Leslie's subject for the evening was "A Talk on Some Aspects of Labour Relations and The Trade Union Act". Mr. Leslie, a legal authority on this subject, gave a very informal and enlightening talk covering many points from the constitutional question with two Acts to be considered, namely:—Provincial Trades Union Act and the Dominion Labour Code. Some of the sections covered by Mr. Leslie's talk pointed out that the Provincial Act looked after Minimum Wage and Hours of Work Act, Annual Holidays Act, and the principle underlying the Saskatchewan Trades Union Act (a provision for collective bargaining). The speaker pointed out that accountants and auditors can render valuable service to the employers by checking the records they are to keep under the different Acts to meet all requirements.

Mr. Killam in his talk on "The Financial Statement from the Banker's Viewpoint and What He Looked For" went through the procedure used by the banker in breaking down an auditor's financial statement to give the information required by the banking office. Mr. Killam took each section on the banker's form individually and explained the procedure used in examining it.

At a meeting of the new council held immediately after the general meeting, the following officers were elected from the council members:

Chairman—R. A. Kennedy, R.I.A., of the Prairie Vegetable Oils Limited, Moose Jaw.

Vice-Chairman—A. L. Heggie, R.I.A., of General Films Limited, Regina.

Secretary-TreasurerJ. P. Golds, R.I.A., of Robin Hood Flour Mills, Moose Jaw.

Assistant Secretary—John Williams, R.I.A., of the Army and Navy Department Stores, Regina.

It was decided to alternate the Chairman and Secretary-Treasurer each year between Regina and Moose Jaw. The two main offices to be filled the coming year by Moose Jaw members.

WINDSOR

The Windsor Chapter held the first regular monthly meeting on March 31st at the Norton Palmer Hotel with Chairman Bill Gatfield in charge.

Mr. Jim Tennant made an impromptu report on the Dominion

Council meeting held recently in Toronto. Mr. Tennant described some of the plans for the Dominion Annuual Meeting to be held this year in Banff. He also reported on the discussion in regard to the Chartered Accountants Act.

Mr. Reg Milne announced the date of the Golf Tournament. The annual affair is to be held June 18 at Lakewood Golf Club.

The Chairman called on Verne Walpole to introduce the speaker of the evening, Mr. R. Manuel, Vice-president of Stevenson Kellogg, Toronto, and the subject "Job Evaluation".

Mr. Manuel defined Job Evaluation as the factual basis for job ranking and classification. Under the general heading "Why" the speaker stated Job Evaluation was an aid in the compilation of salary and wage details, and aid in the administration of wages, an aid to determine job progression and an aid in steering personnel into higher job channels. Mr. Manuel described the technique of Job Evaluation. He stated that points were set for all factors to be taken into consideration. Basically the factors are broken down into four general classifications.

1. Knowledge and skill
2. Effort
3. Responsibilities
4. Working conditions.

These general factors are broken down and points are assigned to each factor. Mr. Manuel stressed that job evaluation is not scientific, but a systematic analysis and appraisal of fact in which human judgment and common sense is very important.

CHAPTER NOTES OF INTEREST IN INDIA

Of interest, particularly to the members of the Edmonton Chapter, is a letter received recently by their Chairman, Mr. J. N. Shortliffe, from S. Ramakrishnan, Calcutta, India, which reads as follows:

"Dear Sir,

Kindly excuse me in taking the liberty in addressing you. I am obliged to the "Cost and Management" for your name and address.

I am writing this to request you to send me, if possible, a copy of the Paper read by Mr. McKinnon at the Edmonton Chapter on "Cost Accounting in Steel Fabrication Plants" as I am sincerely interested in it.

Thanking you very much in anticipation.

Yours faithfully,

C. S. Ramakrishnan.

In passing it may be of interest to know that there are subscribers to "Cost and Management" in nineteen foreign countries and it is gratifying to know that the work of the contributors to our publication and those who present papers at Chapter meetings is so widely read and appreciated.

Because

Ditto Coordinated Supplies "are made for each other"

Chemically

FOR GELATINE MACHINES . . .

Rolls and Films—The standard of comparison in the industry. Fit any duplicator. Products of intensive chemical research and controlled manufacturing processes.

Carbon—For brilliant copies. *Soft* for 100 to 125 copies; *medium* for 75 to 100 copies. Colors—purple, blue, green and red.

Ribbons, Pencils, Inks—Ribbons for any typewriter, in four colors; also available half black record and half purple copying. Pencils in four colors. Leads for mechanical pencils. Inks in eight colors.

Paper—Ditto Penortype A for originals—Ditto Longrun B or Duo-run for the copies. Give brighter copies, longer runs and perfect chemical coordination with other supplies—at no price premium.

FOR LIQUID MACHINES . . .

Fluid—Scientifically developed solvent. Is non-corrosive to metal machine parts, does not affect rubber rollers, is fast drying and does not curl paper.

Carbon and Mastersets—Royalty for 350 and more intense copies; *Dittmark* for 150 to 200 copies. Both Colorsealed to reduce carbon stain. Available in purple, red, green, blue.

Hand Cleaners—Cream or liquid. They quickly remove all dirt and stain, they're safe for the most sensitive skin, they leave a pleasant velvety after-feeling.

Paper—Direct Process Master for originals; Direct Process B for finest copies possible; Duo-run for economical copies. Get the best and pay no more.

DITTO of Canada, Ltd. — 310 Spadina Ave., Toronto

DITTO

TRADE MARK REG. U. S. PAT. OFF.

You get the best overall results every time when *ALL* your duplicating supplies are Ditto, the Coordinated Line. Why accept less? Ask for Free Catalog of all Ditto supplies and machines.

Current Literature Digest

By HAROLD BRICKER

UP? or DOWN? What is the ECONOMIC TREND?

There is some labour unrest in various parts of the continent. It is a question whether it is the result of a CONDITION or BY DESIGN.

B. W. Elson has listed, in The Chartered Accountant in Australia, 25 important matters in Personnel Relations. Most of them are ordinary common sense but are, due to the pressure of favourable business, often overlooked or forgotten.

The "mental wage" is low if the employee is not interested in his job.

The most dangerous policy in handling subordinates is to ignore them.

Give each worker an answer to the question which is in every worker's mind, "How am I doing?"

Every employee is entitled to thorough instructions in the duties he is to perform; the best methods to use; the standards through which his work will be judged.

Corrections should be made with fairness and consideration. Criticism given in the presence of fellow workers is apt to be unnecessarily embarrassing. It is better not to have a rule, than to have a rule to which you permit frequent violations.

The belief that the boss is showing favouritism is highly destructive of morale. Wholehearted employee co-operation is never built on a foundation of fear.

"Mental wages" pick up when the worker is given more responsibility and a chance to show initiative. Ambitious employees are eager to broaden their knowledge of operations outside their own department. We all want a "place in the sun"; every employee should have a feeling of pride in the worth-whileness of his contribution to the business.

BY DESIGN, personnel relations with subordinates and staff may be kept HEALTHY.

TECHNIQUES FOR BUDGETING ADMINISTRATIVE AND COMMERCIAL EXPENSES

The N.A.C.A. Bulletin, Vol. XXX, No. 15, April 1949, published an article under this heading, by Francis C. Reith. The real problem and the real challenge in budgeting administrative and commercial expenses lies in the analysis and evaluation of these expenss. Generally they do not lend themselves to the same type of analysis and control as direct labour and indirect manufacturing expense.

Responsibility must be fixed and acknowledged. In the development of an administrative budget program which is intended primarily

as a tool for cost reduction and, as an incentive for cost reduction and, as an incentive for improved efficiency, the following principles should govern, and be a part of, the budget system:

1. Assign unmistakable organization responsibility for all expenses included in the program.
2. Require each responsibility in the executive to develop an annual operating program.
3. Require each responsible executive to thoroughly analyze all the elements of the anticipated cost and personnel requirements of his operating program.
4. Develop expense standards or yardsticks to indicate where savings can be made and to provide an incentive for cost reduction.
5. Require each responsible executive to justify his proposed expenditure before the company's principal operating committee. Insure recognition for accomplishment.

Standards set in this manner are particularly effective on a variable budget basis where this is practical. As indicated in the above, variable budget standards have important advantages of:

1. Providing an incentive to the management of the operations which are out of line, and
2. Indicating the high cost installations to the central management for its immediate action.

Control of administrative costs may be a profitable endeavor. However, it is really surprising that so few Canadian and American companies are employing the variable budget control throughout the organization. Nevertheless many more companies are now giving consideration and more attention to controlling administrative and commercial expenses than at any time in the past. Naturally, the amount of money and effort expended for such budgeting and cost control must be related to the expected cost savings. Considering this, wherever such attention and effort has been given, the resulting savings have paid for the cost of the program, many times over.

REPORTS TO BOARDS OF DIRECTORS

The Federal Accountant, Australia, Vol. XXXI, No. 2, February 1949, published an article under this heading by C. B. Soward, A.F.I.A. It is often a puzzle which is seldom disclosed, as to who reports what to the directors. An example of a manufacturing organization with its own sales and distribution departments is taken and the reports required to supply the board with the fullest possible information each month could be as follows:

Scope of Report	Prepared by
Administrative	Secretary
Financial	Secretary or Accountant
Sales and Distribution	Sales Manager
Production	Production Manager
Capital Expenditure	Head of the Department Concerned
Special Items	As instructed by the Board

The scope of report under each of the headings will depend on the type of organization. The responsibilities may be covered under various other headings in this country but that such control is found in a country with socialistic complection is interesting.

ARE WE EGOTISTICAL? AN OLD STORY!

An old timer, it has been said, with much interest in his own sphere complained to his wife, "Everybody in this city is queer, except you and I, but, sometimes I think that even you are a little queer."

THE PENALTIES OF INDIFFERENCE
By HERBERT SPENCER

The man who, expending his energies wholly on private affairs, refuses to take trouble about public affairs, pluming himself on his wisdom in minding his own business, is blind to the fact that his own business is made possible only by maintenance of a healthy social state, and that he loses all around by defective governmental arrangements. Where there are many like-minded with himself—where, as a consequence, offices come to be filled by political adventurers and opinion is swayed by demagogues—where bribery vitiates the administration of law and makes fraudulent state transactions habitual, heavy penalties fall on the community at large, and among others, on those who have thus done everything for self and nothing for society. Their investments are insecure; recovery of their debts is difficult, and even their lives are less safe than they otherwise would have been.

REPORTS—BEYOND COST AND VARIANCE REPORTS

Much time and effort is spent under the label of cost accounting in accumulating actual costs, making comparisons with standards, preparing variance reports to various levels of management.

While the value of such reports is recognized by most cost accountants, the responsibility for their development, when it is decided to work them up, is often assigned to individuals who are primarily engaged in accounting routine. We have found it profitable to provide an additional accountant in the role of cost analyst to supply this service. The qualifications of a cost analyst include a well-rounded background in accounting, a thorough knowledge of the manufacturing processes, and a sympathetic understanding of the problems of production foremen. By W. A. Lewis in N.A.C.A. Bulletin Vol. XXX, No. 16.

It is with profound regret that we announce the untimely passing of Mr. Gordon Appleby of Windsor, Ontario.

Gordon had been a very active member of our Society and had been nominated as Chairman of the Windsor Chapter for the coming year. For the past fifteen years he was Cost Accountant at Silverwood Dairies Ltd. and was Past President of the Co-operation Club.

To Mrs. Appleby and the children we extend our sincerest sympathies.

An Accountant's Viewpoint on Depreciation of Fixed Assets

A. E. BISHOP, C.A.

In recent months accounting and financial periodicals have contained many articles decrying the orthodox accounting practices relating to the depreciation of fixed assets. It would seem profitable therefore for us to reconsider our basic accounting concepts of depreciation, the manner in which deviations from these concepts has occurred and the factors which to-day are tending to change these concepts.

WHAT IS DEPRECIATION?

The term depreciation is in itself misleading, in that it implies a loss or diminution of value. In approaching the problem of depreciation accounting it is useful to disregard the fact that fixed assets have a value as such. It is preferable on occasions merely to regard the expenditures on buildings, machinery and equipment as a cost of earning income. Inasmuch as one of our aims in accounting is to match against income the costs incurred in earning such income, some expenditures are deferred to be applied against income to be earned in the future. Viewed in this light, "assets" may be grouped under two headings viz:

1. Those arising from income—accounts receivable, uninvested cash, investments,
2. Those representing deferred costs—inventories, deferred expense charges, unamortized fixed assets.

The problem of depreciation resolves itself therefore into the proper allocation of expenditures in respect of costs which properly apply against income to be earned, generally, over periods exceeding one year. Under this concept "value" is not a deciding factor and the term "amortization" more correctly indicates the proper thinking than the term "depreciation." Two factors enter into the determination of the annual amortization cost. The first is the amount of expenditure (usually referred to as the cost of the asset). The second is the time element—the number of years or other unit of time over which the expenditure should be charged against income (usually referred to as the life of the assets). It will be noted that no reference has been made to the "scrap" or "residual" value of the asset as I assume that gross expenditure has been reduced to a net cost basis before allocation.

Generally speaking, we accountants are well qualified, supplied with proper information, to determine gross expenditures (or cost). We are not qualified, nor should we hold ourselves out as qualified, to determine the useful term of the life of assets, or, as we express it, the term of years during which the expenditures are to be amortized. In so far as we may venture opinions on this question we must admit and should indeed make clear that we are not experts.

CHANGING INFLUENCES

Assuming that we have been in the position to apply sound principles in the determination of the proper charge for amortization, what influences have contributed to the deviations met with in practice? I speak now in regard to the general books of account.

First, there was the attitude of a large proportion of business management that "depreciation really did not mean anything." If profits (before depreciation) were sufficiently large and if it was not desirable to distribute all the profits to shareholders, then it was perfectly in order to make some charge or appropriation in the accounts for depreciation. This attitude of mind has largely disappeared, of course.

Secondly, there are the numerous administrative regulations of the Canadian Tax Department which have the effect of directing the taxpayer how he shall deal with depreciation on his books. He is directed that only to the extent he provides depreciation on the books may he claim the allowance for tax purposes. Maximum rates allowable for tax purposes have, generally, been generous and while the taxpayer is, of course, not obliged to claim the maximum, the temptation to do so has been strong. The regulations governing depreciation in years of loss and allowance of depreciation at accelerated rates, while they may be good and sound taxation provisions do not necessarily reflect the amortization of cost arrived at through engineering and technical studies. The ironclad ruling that cost is the determining factor in arriving at depreciation whether the assets involved are new or second-hand is patently at variance with sound practice. More recently we have the provisions governing the allowance of depreciation at double the rates normally allowed, always providing the amounts claimed are set up on the books. This last factor in distorting the depreciation picture was always regarded as a move to encourage industry towards post war expansion. Whatever our views may be regarding the use of taxation legislation for an end other than the raising of revenues, the requirement that the taxpayer must deliberately over-state or under-state his costs is surely a violation of accounting principles. In general, therefore, income tax regulations have tended to distort proper accounting practice in relation to depreciation accounting. If regulation of accounting practice is desirable and is not attainable without legislation I would suggest that the Companies Act is the more proper legislation to use for this purpose.

The third major factor in influencing deviation from standard orthodox practice is the current trend towards providing depreciation on a "replacement" basis. I shall return to this problem later.

COST ACCOUNTING CONSIDERATIONS

What should be our attitude as cost accountants to the financial and tax considerations which have tended to distort depreciation accounting? In so far as recording historical costs, perhaps the problem is not too important. In our service to management in supplying predetermined costs either in the form of standard costs or estimated costs, however, some reasonably clear principles should be

followed. Especially is this so when the costs so presented are used in determining sales policy regarding prices.

I believe that, generally, we should adhere to our orthodox principles in the determination of the rate of depreciation to be charged. To take a few specific instances, viz:

1. All fixed assets in use should bear depreciation, notwithstanding that some may be fully depreciated on the general books of account.
2. No depreciation should be included for idle machinery and equipment unless it represents "stand-by" facilities.
3. Depreciation on fixed assets purchased at second-hand should be computed on the basis of the remaining life of the assets.
4. Assets subject to double depreciation for taxation purposes should be depreciated at normal rates determined in like manner to other fixed assets not subject to such double depreciation.

In general, then, we should dissociate our computation of depreciation from the financial and tax considerations which may affect the provisions made in the general books of account. There may be circumstances where this general rule should not apply and, of course, we must be prepared to recognize the occasions and adjust our thinking accordingly. Perhaps I should interject that the proper integration of cost and general accounting records is highly desirable, but that when elements and influences tending to distort true costs enter into the general accounts, they should be rejected in the cost accounts. The difference between the figures is then a matter for reconciliation.

What guiding principles should be used in determining the value of the fixed assets to be depreciated? Cost or replacement values. Again we are considering the effect on sales policy regarding prices at which products should be sold .

First consider what happens in a long term fall in values. It is recognized that if the replacement values of our raw materials have fallen below their cost to us, we must "face the music" and determine our costs on such replacement values. Otherwise we will probably be out of line with our competitors. On a long term view the same considerations apply to depreciation. We cannot afford to be out of line with our competitors who have acquired their fixed assets at more favorable costs. In a rising market, is not the reverse entirely logical, quite apart from any theories relating to the replacement of assets? I believe it to be sound common sense. Furthermore, when assets require to be replaced and our costs under other methods thus rise, we may find ourselves in the embarrassing position of having forced prices below the true economic level.

For the purposes in mind, therefore, true cost would appear to presuppose the inclusion of depreciation based on replacement values.

COST OR REPLACEMENT?

For purposes of general or financial accounting, what we term the "orthodox" approach to depreciation is seen to be concerned only with the amortization of the cost of fixed assets over their useful life. In

so far as moneys derived from income are retained in the business through the charging of depreciation, there may be funds available for replacement of fixed assets. This, however, is an incidental feature and not the primary function under our orthodox approach. What disposition does business actually make of these funds? Experience shows that it does not segregate these funds and invest them seperately in order that they may be available for replacement purposes and for these purposes alone. In fact, the funds thus derived are merged frequently with other current funds and are used for a variety of purposes including:

1. Financing of additional working capital requirements in the form of increased accounts receivable and inventories.
2. Increasing productive capacity through the enlargement of plant facilities.
3. Redemption of bonded indebtedness.
4. Any other purpose which management may deem expedient having regard to business policy, such as acquisition of shares, etc. in associated or subsidiary companies.

Where statements showing the source and application of funds are prepared, depreciation is frequently omitted as being a "non-cash" item, exemplifying the fact that the funds derived through the retention of a portion of income are not of a nature to be "applied" in a distinctive manner. Even where depreciation is brought into such a statement, there is frequently deducted therefrom the cost of fixed asset additions which may include both replacements and additional facilities.

There is no assurance therefore that funds derived from depreciation accounting, whatever the basis of providing them may be, will be in a form readily available for replacement or any other desired use. It cannot be said that business has, generally, adopted principles of financing consonant with the theory that the purpose of depreciation is to provide for the replacement of fixed assets.

Let us examine some of the undesirable features of the orthodox methods.

The emphasis in financial statements to-day is more and more on the income statement rather than the balance sheet. During periods of inflation business income is reported in dollars having a current purchasing power lower than that existing in pre-inflation periods. Many of the costs of earning this income are expressed in dollars of the same "value." These are the day to day expenditures for wages, salaries, expenses, etc. which, in general, are incurred, expended and charged against income, all within a relatively short time cycle. There usually is a time lag between the incurring of expenditures for materials and their use and charge to income. While this may not appear serious and consequential in relation to individual transactions, the cumulative effect in a period of rising prices may be such as to give rise to substantial difference in results from using different bases of valuing the materials used. In U.S.A. through the use of "Lifo" and other related methods attempt has been made to match costs of materials against income derived from their use in terms of the same "dollar." In other words while replacement cost of materials is not used (although this

is advocated in some quarters in the form of "Lifo") the last cost is used rather than the first cost.

Depreciation of fixed assets, representing amortization of cost, is a conglomeration of dollars of varying purchasing power; pre-war dollars, wartime dollars and post-war dollars. These dollars are added together even though they may be as unlike as chalk and cheese. In the absence of a measure of value more stable than the accepted currency we have accepted dollars as the measure to be used to express financial results.

Critics therefore attack accountants for the presentation of financial income statements which do not completely match against income earned in current dollars the costs computed on a similar current basis. They contend that in a period of inflation profits are overstated.

This criticism, in so far as depreciation is concerned, is justified if we are to accept the premise that the purpose of depreciation is to provide funds for the replacement of fixed assets at current prices. This concept is not, however, the same as the orthodox principle of amortization accepted heretofore. Neither is it in accord with the practice of business in using depreciation funds for purposes other than replacement, as we have seen.

Admittedly current balance sheets reflect fixed asset values in dollars of varying worth and depreciation reserves to-day are generally inadequate for the purposes of providing for replacement of fixed assets.

We are being assailed on this point, although without proper appreciation by many of our assailants of the basic concept of depreciation accounting as we have understood it. If we are to accept the new concept of depreciation accounting we should be clear and business men and the public should be clear as to its implications. In the main it implies not only that funds would be provided out of income sufficient to replace fixed assets at the end of their useful life, but also that funds are being provided to protect the common stockholder against loss in the purchasing power of the dollar should the business be discontinued. Even more. Since this protection presumably would not extend to bondholders or preferred shareholders the equity of common shareholders (where other equities exist) would be increased, in terms of dollars, to a greater extent than the depreciation in the purchasing power of the dollar. Are we and others concerned prepared to accept these implications? Are bondholders and preferred shareholders to be entitled to similar protection? If so, where do we end—what of policyholders in insurance companies, of annuitants, of savings bank customers? It is not in the scope of this paper to answer these questions which are basically of an economic nature. It does appear that many economists do, in large measure, advocate the new concept of depreciation accounting and its implications.

Assuming acceptance of the replacement concept of depreciation accounting let us examine two of the methods which have been suggested to reflect the change into accounting practice.

First there is the "appraisal" school of thought. Here it is suggested that fixed assets should be revalued at current replacement cost and established at these figures on the books. Concurrently accumu-

lated depreciation to date would be revised and set up. Future depreciation provisions would be made based on the revised asset values. If the net result of the appraisal were merely credited to a "surplus account arising from appraisal" only future depreciation would be corrected. In other words no allocation of funds would be made to provide for depreciation of currency values which has taken place between the time of acquisition of the assets and the date of appraisal. Depreciation must be provided out of income if it is to be represented by cash, therefore, under this method of reflecting the change to a replacement concept of depreciation, the increase in depreciation reserve would require to be charged against earned surplus. The method of appraisal adjustment does not appear to find a great deal of support largely because of suspicions aroused in the late 1920's when similar steps were taken, perhaps for other reasons.

Secondly there is the "price index" school of thought. In the main it is here proposed that the provision for depreciation should be adjusted each year, having regard to a series of index figures which would indicate the purchasing power of the dollar in relation to the current year in question. This would involve an analysis of assets and their costs into years of purchase and the establishment of indices for each of the years back to the year of acquisition of the oldest asset — a formidable task when dealing with some of our businesses, especially in regard to buildings. It will be seen, of course, that even though assets may be fully depreciated it would still be necessary to make provision for depreciation where the value of currency has fallen since the date when the assets became fully depreciated. It will also be evident that, in order to adjust the reserve at the date of change-over of methods, a surplus adjustment (probably substantial) would be required. If assets are retained on the balance sheet at cost and provisions for depreciation (including adjustments for price levels) are carried to one reserve account, this latter account may exceed the asset values even before the end of their estimated useful life. Another interesting point would arise if the price index for any year showed a fall. Would it not still be necessary to put a "floor" on the provision? Perhaps the term "cost or replacement, whichever is higher" might have to be developed. It is obviously impossible to state accurately what the cost of replacements will be at a future date and the method outlined would require a separate study each year to determine the accumulated reserve requirements and the current year's charges. The practical application of the method would not, in many cases, be too onerous a task. The ascertainment of reliable indices would, however, present a formidable task even assuming that the type of indices applicable to each particular industry could be decided on.

Even if such a method were adopted, but keeping balance sheet values at historical cost, it must always be realized that the method has, in fact, two objects viz:

1. the amortization of cost.
2. the provision of a reserve to supplement the amortization reserve to the extent necessary to provide the additional funds required for replacement purposes.

The two reserves, while they would to an extent be complementary, are different in nature. The first is merely the provision to amortize the cost over the useful life, at the end of which it is used to write off the asset. The second is in effect a freezing of income or surplus for the purpose of providing funds additional to depreciation funds sufficient to replace the fixed assets. Alternatively it is a withholding of profits to ensure that the equity of the common shareholders is protected from fluctuations in the value of currency. The two reserves should, therefore, not be merged but always kept separate. Furthermore as I will illustrate the second reserve (so called) is not and never becomes other than a breakdown of the shareholder's equity. Assume the following position in the affairs of a company which has used the replacement concept of depreciation accounting:

Assets

Fixed Assets — at cost	$ 1,000,000
Other Assets — cash, investments, etc.	2,000,000
	$ 3,000,000

Liabilities

Reserve for Depreciation	$ 1,000,000
Special Reserve for Replacement	1,000,000
Capital Stock	1,000,000
	$ 3,000,000

The fixed assets are at the end of their useful life and are to be scrapped and replaced at cost 100% in excess of the cost of the original assets. Through the provision of the special reserve, funds have been accumulated for this purpose. The next position is, therefore:

Assets

Fixed Assets — at cost	$ 2,000,000

Liabilities

Special Reserve for Replacement	$ 1,000,000
Capital Stock	1,000,000
	$ 2,000,000

What is the nature of the special reserve now? It is no longer required since the new fixed assets are stated at cost which is current dollar cost. It clearly is part of the shareholders equity therefore, **as it always has been.** In the absence of current assets it cannot be distributed to shareholders, but only for the reason that management has exercised a certain financial prerogative in holding back profits. If management issued bonds for $1,000,000 in current dollars then presumably the surplus (or reserve, as it was) could be distributed in the form of dividends.

If the reserve always was part of the shareholders equity then it has merely been a device for the appropriation of surplus to ensure that funds were not distribuited to shareholders in the form of dividends — a financial expediency. By the same token the provisions from time to time to build up the reserve have not been costs but appropriations.

In actual practice, if the currency stabilized, as replacements were made at the higher replacement cost the annual recalculation of the special reserve for replacements would show a decrease in the reserve required. This decrease would revert to surplus until, when replacement was complete at the higher price level, the reserve was no longer existent.

It is desirable to emphasize again the nature of the reserve:

1. that it is not of the same nature as a reserve for depreciation.
2. that, in reality, it is always part of the shareholders equity.
3. that it arises through the exercise of financial prerogative in connection with the disposition of surplus and is an appropriation of profits rather than a cost of earning income.

Management faces a problem and all must recognize that in a period of rising prices amortization of cost of fixed assets will not in itself provide a business with sufficient funds to replace the assets at the end of their useful life. Business must therefore decide between two alternatives or a combination of both in settling the solution to the problem. The first is the raising of new capital as and when it may be required. The second is the planned setting aside out of profits of such sums in addition to ordinary depreciation as may be deemed practicable for the purpose. If the second alternative is adopted it is desirable that the provision should be separately stated as an appropriation of profits and that the accumulation of the reserve should be segregated from the depreciation reserve on the balance sheet. The problem is one for the exercise of financial prudence by management and the solution must have regard to the individual circumstances existing in the particular businesses facing the problem. As accountants we should be clear in our minds as to the problem and as to the effect of the various solutions put forward at different times, in order that we may advise management and shareholders as to the essential nature of the solutions and in order that the effect of the steps taken should be properly reflected in the books and financial statements of the business.

Differential Costs

A STUDY IN COMMON SENSE

By W. W. HENDERSON, R.I.A.

An article like this, whose premise is the explanation of a technical subject in considerable detail, should at the outset, I feel, supply a concise but comprehensive definition of that subject; and an outline of at least a few typical applications of the principles enunciated.

After all, you in reading this article are spending time—time is valuable; and you have every reason to expect some superficial display of the contents hereof in advance of complete perusal, just as retail outlets to-day display their merchandise in window and case for the visual inspection of potential customers. The man requiring a lawn mower can recognize a ladies' dress shop by its window content, without ex-

pending time to enquire within if that store does or does not handle lawn mowers.

What are Differential Costs? Are they a specific system of Cost Accounting such as are Standard Costs. No! Essentially Differential Costs are those attending each level of factory volume or activity. They are not a Cost System but a Cost Study; and in practice, they are ordinarily utilized in forecasting Costs at these various levels. Concomittantly, their value in determining profits in advance are reasonably manifest. Some of the principles inherent in them are applicable to warehousing and/or retail establishments; but in their fullest scope, they concern a manufacturing enterprise.

Some questions they will answer for you are:—

(1) What is the lowest price at which we can afford to sell our product, based on our present volume of manufacture?
(2) What volume changes must we initiate to make profitable manufacturing, when a fixed unit sales price prevails?
(3) Considering the price level prevailing on merchandise manufactured by us, what volume must we produce and sell in order to realize a net profit representative of a definite per cent of capital invested?
(4) Is our business in the law range bracket? Or
In that of high range? Or
Does it lie somewhere twixt the two?
(5) Will it pay to expand our plant?
(6) When will it become unprofitable to expand it?
(7) What method of distribution will prove most profitable?
(8) At what minimum price can we afford to sell an expanded output, if we maintain present prices with regard to our current production?
(9) If the bulk of our trade is at present directed to retail outlets, but we have a consistent demand from jobbers for some of our products, how large a percentage of our total can we afford to sell to jobbers and still attain our planned net profit goal—recognizing a uniform differential existent between our wholesale and retail prices?

The above constitutes my show case. Naturally, I haven't exhibited all my wares, and you have no details as to the specifications of the items I have displayed. This therefore is the next phase.

Here is a homely and simple example which will illustrate, I think, the inherent principles of Differential Costs.

You are driving a large truck to Toronto. Your load is fruit baskets, stacked high above the level of the cab. You come to a subway. It is a very low one. Is there enough clearance? If you get out of the cab, measure the distance from the ground to the highest point of your load, and then compare it with the height of the subway's passageway printed upon the subway's vertical surface—you are practising the theory of Differential Costs. Your truck height is comparable to the fixed expense in your business—it doesn't vary from day to day. Your load is the proportionate expense, and it will vary each trip.

The height of the subway's passageway is your Sales. The clearance afforded—your profit.

And just as you should forecast your clearance every trip where you encounter a low passageway with a large load—so you should forecast your costs and profits with respect to your business at specific intervals and especially when encountering changing sales conditions.

As a systematic approach to this subject, and in order that cohesion may be maintained, let us sectionalize our study of Differential Costs into principal categories; then sub-divide these for amplified explanation. Such principal and sub-classifications follow:—

GENERAL OUTLINE

Operating Factors	**Manufacturing Division**
	Direct Labor.
	Direct Material.
	Manufacturing expense.
	Commercial Division
	Marketing expense.
Capital Factors	Administration expense.
	Financial expense.
	Selling prices.
	Capacity utilization.
	Additions to machinery and/or equipment.
	Additions to building.
	New batteries of machinery and/or equipment.
	New buildings.
	Cash condition.

MANUFACTURING DIVISION

Direct Labor.

Direct labor is paid for either at a rate per hour worked; at so much a completed piece; or on some form of incentive system, usually providing for a higher or piece rate scale to obtain when certain time standards are attained, but contrariwise to revert to hourly rate when the standard is unrealized.

Piece work provides a constant cost per piece irrespective of volume; and consequently may be ordinarily viewed as a truly proportionate cost. But the number of pure piece-work shops to-day I imagine is rare. Organized labor is a definite force with which we must reckon; and some basic guarantee for time spent by workers in the shop, rather than remuneration based wholly on individual production, is usually demanded of management. Consequently, in the interest of workable labor relations most plants use either the straight hourly rate or some form of incentive.

If you have 100 operators in your shop, working 8 hours a day, you have a productive labor capacity of 800 hours daily. Suppose at present you are getting 8000 pieces of production a day. But you reason that by more effective foremanship you could secure 10,000 completed units from the same labor force during the same time at no increase in the hourly rate, then your total cost for 10,000 pieces would be the same

as for the 8000 pieces now being produced—a reduction in direct labor cost per piece of 20%. The more your volume per day increases per man, consistent with acceptable quality standards, and where such man is paid solely by the hour, the less your unit of product will cost for labor.

The majority of incentive wage systems to-day follow the pattern of paying whichever is the higher—piece rates or hourly wages earned for a specific period (daily is probably the most common). So if a large majority of your employees achieve or surpass labor standards set, your labor cost follows the piece work pattern fairly closely. Fluctuations in volume of production will in consequence not affect such unit labor costs too appreciably.

Direct labor cost on the incentive or piece work basis can be fairly easily foretold; but where the hourly rate is used, and questions of production increase or decrease arise, close analysis of your production estimates per man are necessary in order to forecast a unit cost which will prove accurate.

Production increases sometimes require night and/or Sunday shifts or overtime; and in planning such expansion cognizance must be taken of the possibility of having to pay premium rates for such work. Such practices are not uncommon, and their diminuition in the predictable future cannot be assumed. Increased unit labor costs will attend the particular production worked upon during such time—assuming the same output per man, which with respect to night or Sunday work usually proves a fallacy.

Planned decreases in production may bring you into conflict with a union, and to such an extent that the retention of some drones may be necessary. Reduction in product output per man per day for any reason serves to increase unit labor product costs—assuming wage rates remain static, or reduce so little as to con-compensate for falling production.

The labor market must be always taken into account, when considering volume increases. Can you secure enough able help at prices comparative to what you have been paying, or consistent with what you may determine you can afford to pay? That market reacts to the law of supply and demand just as sensitively as does the commodity market. If you should be already a large employer of labor, and your considered production increase large, you might have to obtain so many more additional workers that its effect could be felt on the prevailing wage level.

Certainly this is not all which could be said on this topic, but it is enough I think to draw to your attention some of the more outstanding factors concerning volume changes and their resultant effect on direct labor costs.

Direct Material.

Volume changes can affect the price you pay for material greatly. Generally if you can expand your purchases appreciably, a lower unit price is afforded you. But sometimes expansion of demands in this regard absorbs all material available from your usual and most economi-

cal sources of supply. If you have to go farther afield, and either incur heavy freight charges or enter into competion for supplies available elsewhere with buyers whose demands formerly have not affected you directly, you may in total have to pay more instead of less per unit of material. Another thing your stowage capacity may be inadequate, and additions to existing structures or wholly new buildings may have to be erected. However, that is a phase belonging to the "Capital Factor" shown in the general outline above. Increases in production may necessitate the use of natural substitutes; yes, even synthetics. Sometimes a synthetic, for example, should there be enough commercial demand for it, will suddenly move downwards from a research and high cost level to very low one, as a result of mass production. It isn't unusual to find synthetics superior to natural products, and if costs are relative sometimes their choice is one of preference.

The economics of material supply is not a simple one, and no effort is intended towards minimizing it herein. But it is too large a subject to treat here other than in a superficial way. I hope, however, I may have suggested some of the salient principles of approach in analyzing your direct material costs at varying production levels.

Manufacturing Expense.

Here, because of the particular vagaries of fixed expense, is one of the factors complicating a Differential Cost Analysis.

Proportionate expense — that which varies as to amount in a fairly constant ratio to activity—is reasonably static per unit of product. But volume changes will on occasion upset the ratio greatly. For example, services secured from outside the plant may be charged you at a higher sum than usual if such labor is required at night or on Sundays. Indirect labor of a class which may be viewed as proportionate in sum to volume, can because of scarcity or inconvenient shifts, demand and obtain preferred wage treatment. But on the whole, the ratio mentioned, subject of course to individual analysis, generally may be expected to prevail. And where it does, it may be forecast as a constant amount per unit of product.

Fixed expenses (like tools, guages, fixtures, depreciation, fuel, and property taxes as well as the non-variable element of many expenses which are of a composite nature—part "fixed"—part "proportionate") by their nature are normally subject to little change in total amount. Your property taxes for example will continue in the same amount irrespective of plant activity. Your plant may work 10,000 direct labor hours in a week, or 20,000. Your property taxes will vary in no way whatever because of such production acceleration. Consequently, if for example such fixed expense is $10,000.00, then 10,000 units produced will create a fixed expense cost of $1.00 per unit. But increase your production to 20,000 units—your fixed expense in total will not have changed, but your fixed expense cost per product unit becomes 50c.

However, some types of expense normally viewed as fixed do vary with production increments. Depreciation may be accelerated because machinery is subject to greater use and concomittant wear and tear. Fuel for building heat, usually considered of a fixed nature, may in-

crease with longer working hours. Assistant foremanship may be required, not in direct ratio to production, but on the basis of steps—one such assistant will suffice from let us say 10,000 direct labor hours to 15,000 direct labor hours' activity per week; but activity of from 15,000 to 20,000 direct labor hours per week will necessitate the services of a second assistant. And also consider that your best operators, the wages of which you may view as a proportionate type of cost, are often not easily replaced; and you hesitate to lay them off in times of contracted production. Their transfer to less remunerative but essential work at such times may be possible,—but there may be reasons making such transfer undesirable or impossible.

The vagaries of Fixed Expense, in combination with inconstant ratios maintained with respect to volume by direct labor, direct material and proportionate manufacturing expense, can easily create conditions in business wherein instead of one "break-even" point being computable, there may be two or more. And instead of a profit being realized after sales exceed the level of the first "break-even" point, a loss may occur at a particular sales dollar level above that point. A "break-even" chart may indicate a wide area of loss—i.e., from that sales volume to a considerably higher one—then a profit will materialize again. So a close study of your factors of expense is necessary to fully acquaint yourself with profit reaction to varying production levels.

If you absorb manufacturing expense into production on the basis of a normal burden rate, and charge or credit the difference between the amount so absorbed and the actual expense incurred to "profit or less" account, then you are carrying your finished goods inventory at a cost different from actual. The budget set up for such burden rate determination will give recognition to the extent plant capacity is expected to be utilized. The larger the expected utilization of plant capacity, the smaller will be the amount absorbed per product unit. This, because fixed expense is normally constant. Suppose for illustration that your plant activity is expressed in direct labor hours; and that your fixed expense is $10,000.00 If 10,000 direct labor hours is the plant capacity expected tto be utilized, then the fixed expense would be absorbed into production at the rate of $1.00 per direct labor hour worked. But on the other hand if you plan on 15,000 direct labor hours being worked, your rate drops to 66⅔c per direct labor hour. If in actuality your plant capacity is only 10,000 direct labor hours, where the burden rate is predicated on 15,000, you have unabsorbed $3,333.33. If you charge all that amount to current "Profit or Loss" account, your profit plans go awry. However, if the $3,333.33 is apportioned between Cost of Goods sold account and Finished Goods inventory, the problem is somewhat minimized.

Again this is a very abridged version of manufacturing expense as it relates to a Differential Cost study. But it is all which seems justifiable of inclusion in the space permitted here. I hope, however, that what has been said may serve as a reasonably lucid and comprehensive introduction to the subject.

Commercial Division.

Commercial expense poses a peculiar problem. This type of expense attaches only to the units sold, whereas direct labor, direct material and manufacturing expense are primary cost constituents of the products manufactured whether sold or not. Profit or loss is based essentially on those sold, although deterioration in inventory value may be a charge against the current profit or loss account. Therefore in your computations you are concerned primarily with the total cost of units sold, with the selling prices in total obtained, and with the resultant profit. Still those left in inventory have to be sold during another period. Some forecast of that next period is needed, or at least of that constituent part of it required for the sale of inventories produced in the former period; because expanded production which in composite results in a profit this period and a loss of equal or greater amount next is not economically sound.

However the crux of a Differential Cost study is the unit factory cost. Commercial expense studies can be made on the basis of the number of units sold. A commercial expense unit cost can then be secured. The two types of unit costs combined provides us with a total unit cost.

Now to the sub-divided classifications of commercial expense:—

Marketing Expense.

Fixed and proportionate characteristics attend marketing expense just as they do manufacturing expense. And the treatment of analysis is the same. However, the expenses are incurred for different reasons. The clue is in their name—"marketing". Any expense incurred by reason of distribution or sales effort belongs to this group. Therefore though the same principles govern their analysis, a different ground for inspection is provided. What will be effects of volume changes in sales on shipping expense, branch expenses, advertising, and sales promotion? For example, advertising expense sometimes increases in inverse ratio to sales volume.

A typical example of a marketing Differential Cost study might be in the case of a department store selling by mail order as well as over the counter. The ordinary store fixtures, ornate premises, and smooth efficient salespeople wouldn't be necessary for mail order sales. Therefore are you going to apportion total marketing expense pro-rata to both classes of sales; or are you going to establish a true mail order unit marketing cost as against a different but factual unit cost for over-the-counter transactions.

Administrative Expense.

The treatment of this kind of expense is identical with that accorded marketing. Suffice it to define the function of administrative expense. It is that type of expense incurred for over-all business direction—while such direction may touch equally on manufacturing and sales activities, it is of too general a nature to be specifically identified with either.

Financial Expense.

Under this heading is grouped all miscellaneous types of expenses—

less miscellaneous income—which are not directly concerned with the operation of the business. That is they are usually dependent more for existence on the capital structure of the business than upon ordinary transactions of trade. Typical examples of expenses related specifically to capital structure are:—Interest on loans (secured or otherwise); bond discount amortized. On the other hand expenses often though not universally grouped under this heading are:—Cash discounts granted customers; bad debt charge-offs. To the extent that any of these expenses vary inconstantly with volume changes, Differential Costs are created.

Selling Price.

Selling prices are mentioned among the Operating Factors. They have to be considered in total and by the unit. The real value of Differential Costs lie in: first, forecasting costs at the varying production levels; and then deciding necessary selling prices at each level. What you need by necessity of profit as a selling price may not be obtainable for reasons of competition. You may have to reduce average unit prices below what you wish; but with a reasonably accurate knowledge of future costs, plant capacities, and obtainable markets, you should be able to work out some kind of a profitable compromise with respect to your sales policy.

Capital Factors.

These can all be explained together, as there is a definite interrelationship existent between them.

If you plan expansion of production — the first question is, will your present plant as it is handle it? If your plans would outstrip capacity, then new or rebuilt machinery would have to be put into operation. The rebuilding program might be minor and inexpensive; or it might entail expenditures reasonably equivalent to new machinery. Also new machinery, available only at high prices, may be the sole solution. Additions to existing buildings, or entirely new and separate structures may be required. Additional stowage capacity may be needed, necessitating cash outlays for re-design of buildings. Or conveyor systems, motor trucks, etc., may have to be purchased. These acquisitions mean more depreciation, more insurance and possibly more fuel for building heat. This means your manufacturing expense will be augmented.

Then there is your ability to finance these new capital assets. If you haven't the necessary capital, or lack liquidity of capital, borrowing may be essential. The rate on such loaned capital has to be compared with the increase in profits anticipated by the volume increase. Too, there is the big question—to-day I can sell the larger volume—to-morrow also—but the day after to-morrow, what? Will I be able to continue my grandiose scheme long enough to justify expenditures for larger inventories, a larger labor organization, a larger accounts receivable control balance and greater fixed assets?

Change in methods may mean the disposition of good equipment at give-away prices. Such changes should be considered not only in the light of possible financial advantages, but also from the angle of capital

loss—machinery, equipment or buildings, in otherwise good condition but unprofitably saleable, and no longer necessary.

I seem to have been stressing only business expansion—but Differential Cost analyses work just as successfully with respect to business contraction. One paramount point to remember—there is always one productive level at which production costs are most economical. It isn't a static one—it changes with the business cycle. You'll have to look for it, and once found keep it under observation.

Specimens Illustrating Mathematics of Differential Cost Applications.

	(50%) 50,00 units	(75%) 75,000 units	(100%) 100,000 units
Direct Labor	$ 25,000.00	$ 38,000.00	$ 50,000.00
Direct Material	55,000.00	80,000.00	100,000.00
Mfg. Expense	20,000.00	25,000.00	30,000.00
Marketing Expense	20,000.00	25,000.00	30,000.00
Admnstn. Expense	5,000.00	8,500.00	10,000.00
Financial Expense	200.00	350.00	2,000.00
	$125,200.00	$176,850.00	$222,000.00
Total Unit Cost	$ 2,304.00	$ 2,358.00	$ 2,220.00

The above, while not intended in any way to reflect acceptable and usual ratios existent between classes of expense nor between the fixed and proportionate components of such expense, will serve as a basic example in Differential Costs. All subsequent problems and solutions will be predicated on the costs recorded here. Now to apply them specifically in the direction of profit determination, taking into account varying sales policies and prices.

(A) QUESTION

Your capital invested is $75,000—you want a net profit before income taxation which will corrrespond in amount to 50% on capital; i.e., $37,500.00 If all units are sold at the same price and your planned activity is 75,000 units, what must your unit selling price be?

Solution.

$37,500.00 / 75,000 units = 50 cents profit per unit

i.e. 2.358+.50 = 2.858 selling price each

Proof.

2.858×75,00 units = $214,350.00

2.858×75,000 units = $214,350.00

Net profit $ 37,500.00

(B) QUESTION

Same capital—same volume, same net profit desired as No. (A). 25% differential in selling price established between sales to jobber and retail. How much to be sold to jobber—how much to retailer? Jobber prices per unit $2.50.

In consequence retail price	$ 2.50
Plus $2.50×25%	.625
Per unit	$3.125

Solution.

No. 1 step: X = number of units sold retail.
Y = number of units sold wholesale.

No. 2 step:

Total Sales 3.125 X + 2.500 Y = $214,350.00 } using simultaneous
Total Cost 2.358 X + 2.358 Y = $176,850.00 } equation

No. 3 step:

3.125 X + 2.50 Y = 214,350.00
1.062 (2.358X) + 1.062 (2.358 Y) = 1.062 (176,850.00)

No. 4 step:

3.125 X + 2.50 Y = 214,350.00
(—) 2.500 X + 2.50 Y = 187,496.37

.625 X —O— 26,853.63

Step No. 5:

$$X = \frac{26,853.63}{.625} = 43,000 \text{ approximately}$$

Proof.

Total units
Units to retail —43,000 X 3.125 each = 134,375.00 sales
Units to jobbers—32,000 X 2.500 each = 80,000.00 sales

saleable	75,000	214,375.00
Less total cost		176,850.00
Net profit		37,525.00

(not exactly 37,500.00 because I made no effort towards absolute accuracy of the figure "1.062",used to secure the same value of "Y" in both the 1st and 2nd line of the simultaneous equation.)

(C) QUESTION

At 100% level (i.e. 100,000 units to be sold) can we afford to sell our product at $2.45 per unit, assuming the same capital structure as in "A" and the same desired minimum net profit.

Solution.

Sales value 100,000 X 2.45 = 245,000.00
Total cost 222,000.00
23,000.00

Then the answer is "No", notwithstanding you made a net profit.

(D) QUESTION

If you sold 75,000 units at the minimum of $2.858 each, could you afford to sell an additional production of 25,000 for $2.30 each—again assuming you want a net profit of 37,500.00.

Solution.

75,000 X 2.858 =	214,350.00 sales value
25,000 X 2.300 =	57,500.00 sales value
	$271,850.00
Total cost at 100% level	222,000.00
	49,850.00

The answer then is "Yes".

(E) QUESTION

If you sold 75,000 units at $2.858 each, what is the lowest you could afford to sell an additional production of 25,000 — assuming your net profit need is again $37,500.00.

Solution.

Total cost at 100% level	222,000.00
Sales value on 75,000 units at 2.858 each	214,350.00
Loss	7,650.00
Net profit required	37,500.00
Amount necessary to realize on sale of 25,000 increment units	45,150.00

The price of each increment unit would be $\frac{45,150.00}{25,000} = \$1.08$ plus each

NOTE: This price would be so low as to likely cause serious repercussions from customers buying at $2.858, but it exemplifies a useful point.

I am going to conclude on a constructive and what I hope to be a timely note:—

I suggest that to-day is a propitious time to look into the future. Your shop activity level may soon be unavoidably subjected to change. Differential cost studies will almost inevitably pay off.

We hear economic prophesies for the future ranging from the most pessimistic to the optimum in optimism. What "Old Man Time" has tucked up his sleeve for 1949 will only be disclosed to us day by day—month by month. But it seems fairly evident that the business honeymoon is over. Competition is really keen in most lines. Heavy inventories of many products are reported. It seems likely to me that this will not be a normal year—it will maybe be a very strange one! booms in many industries; recessions in others.

What is the future of your business? To-day is of 24 hours duration only. The future is as close as to-morrow. You'd better check on that business of yours—examine it with the greatest care, using Differential Cost principles. Maybe an uninterrupted advance in your industry may be expected, and continued expansion planned—but maybe

not. Yours may be the business which has a ticket on the toboggan slide. In any event you can lose no advantage in making a conservative estimate of future sales volume and value, together with attending costs and profits. It may prove to be your flashlight in a very dark business night.

New All-Purpose Machine Introduced

Just arrived on the Canadian business scene is the new National All-Purpose Figuring Machine—rounding out the famous line of cash registers and accounting business machines manufactured by The National Cash Register Company of Canada Limited.

Among the many improvements in this new desk model machine are: flexible stair-step keyboard . . . speed stroke operation . . . automatic printing of ciphers . . . add and subtract motor bar . . . large visible dials . . . repeat, non-add and non-print levers . . . single and double spacing . . . electrically operated totals and sub-totals.

The National All-Purpose Figuring Machine is available in handle-operated models or electric models that have a universal motor that will run on any AC or Direct Current.

These new All-Purpose Figuring Machines are now being built in Canada. They are available for demonstration at any of the Company's branch offices throughout Canada and orders are being accepted for early delivery.

« STUDENT SECTION »

ADVANCED COST ACCOUNTING

SOLUTION TO PROBLEM 5

GRATES MANUFACTURING COMPANY

Comparative Statement of Estimated and Actual Cash Receipts and Disbursements

Month of January

Cash Receipts

	Estimated	Actual	Difference Between Estimated and Actual
Accounts Receivable, beginning of month	60000	60000	
Sales	100000	96250	— 3750
	160000	156250	— 3750
Less: Accounts Receivable, end of month	55000	56000	— 1000
	105000	100250	4750
Cash on Hand, 31st December	72000	72000	—
	177000	172250	— 4750

Cash Disbursements

Accounts Payable, beginning of month	36000	26000	— 10000
Purchases	60000	63000	+ 3000
Selling Expenses	8600	9600	+ 1000
Office Expenses	8000	7500	— 500
Other Expenses	3000	2700	— 300
	115600	108800	— 6800
Less: Accounts Payable, end of month	22200	24000	— 1800
	93400	84800	— 8600
Taxes	1200	1350	+ 150
Royalties	5000	5500	+ 500
	99600	91650	— 7950

Wages, beginning of period	1000	1000				
During period	15000	15500				
	16000	16500				
end of period	800	850	15200	15650	+	450
			114800	107300	—	7500
Cash on Hand 31st January			62200	64950	+	2750

SCHEDULE OF ANALYSIS OF VARIATIONS

Sales:		
50,000 units at a reduction of 25c	12500	
Less: 5000 units at $1.75 additional	8750	
Net Reduction in Sales		3750
Purchases:		
10000 units at 90c additional	9000	
Less: 60,000 units at a saving of 10c	6000	
		3000

Comments:

This problem was a simple one and the candidates in examination found little difficulty — except for a few who attempted involved lay-out of schedules. The average mark was 15 out of 22.

QUESTION 3

(a) How does cost accounting for labour for a process industry differ from that of a job order system?

(b) Explain what is meant by a "department" when the term is used in computing costs. What kind of departments are there in a factory?

(c) Explain how "lost units" are treated in process cost accounting when the units are lost (a) in the initial manufacturing department and (b) in a subsequent department.

Solution to Question 3

(a) Labour Costs in a process cost industry are charged against the producing departments for the period involved and divided by the production for the same period in terms of finished product in determining average unit costs. In a job order system the labour costs are charged directly to the specific jobs in determining actual costs for each job.

(b) A "department" is a production or service cost centre where similar operations or services are being performed. There are production and service departments in a factory.

(c) The expense in connection with "Lost Units" in a process cost accounting system is added to the cost of production of the particular department in which the units are lost are spoiled.

CHAPTER OFFICERS

BAY OF QUINTE

Chairman: Carl Casey, Deacon Brothers Ltd., Belleville.
Secretary-Treasurer: Robert J. A. Taylor, Mead Johnson & Co. of Can. Ltd., Belleville.

CALGARY

Chairman: G. M. Raeper, R.I.A., McColl Frontenac Oil Co. Ltd., Calgary.
Secretary: L. W. Bessell, Calgary School Board, Calgary.

EASTERN TOWNSHIPS

Chairman: R. M. Cutts, Canadian Ingersoll Rand Ltd.
Secretary: A. A. Savage, Sturdy Accessories Ltd.

EDMONTON

Chairman: W. H. McKinnon, R.I.A., Standard Iron Works Ltd.
Secretary: H. M. Moore, Northwestern Utilities Ltd.

FORT WILLIAM-PORT ARTHUR

Chairman: James A. Aitken, Public Accountant, Port Arthur.
Secretary-Treasurer: Leslie D. Dack, C.A., Dept. of National Revenue.

HAMILTON

Chairman: W. C. Sparham, R.I.A., International Harvester Co. Ltd.
Secretary-Treasurer: A. R. Wright, R.I.A., Firestone Tire & Rubber Co. of Canada Ltd.

KELOWNA

Chairman: C. E. R. Bazett, C.A., R. G. Rutherford & Co.
Secretary-Treasurer: Carl E. Brannan, City of Kelowna.

KENT COUNTY

Chairman: Lorne Davies, Ontario Steel Products, Limited, Chatham.
Secretary-Treasurer: Miss Ruth Harte, Pioneer Hi-Bred Corn Co. of Canada Ltd., Chatham.

KITCHENER

Chairman: George Egoff, Sheldon's Limited, Galt.
Secretary: A. M. Crowder, Beatty Bros. Ltd., Fergus.

KINGSTON

Chairman: G. E. Carson, Department of National Revenue.
Secretary-Treasurer: D. Dalgleish, Canadian Industries Limited.

LETHBRIDGE

Chairman: J. Lakie, R.I.A., Sicks' Lethbridge Breweries.
Secretary-Treasurer: W. T. Hurst, Lethbridge Collieries Limited.

LONDON

Chairman: L. W. Bennett, R.I.A., Cost Consultant.
Secretary-Treasurer: F. N. Ware, R.I.A., Murray-Selby Shoes Limited.

MONTREAL

Chairman: M. H. Bacon, R.I.A., Consolidated Lithograph Mfg. Co. Ltd.
Secretary: W. G. Joule, C.A., Price, Waterhouse & Co.

Chapter Officers—Continued

NEW WESTMINSTER

Chairman: W. H. Harvey, William Harvey Limited.
Secretary-Treasurer: R. Scannell, Heaps Engineering (1940) Limited.

NIAGARA

Chairman: J. W. Shea, Coles Hardware, St. Catharines.
Secretary-Treasurer: Alfred Owen, Interlake Tissue Mills Company Ltd.

OTTAWA

Chairman: C. B. Watt, R.I.A., Eldorado Mining and Refining (1944) Limited.
Secretary: B. H. Breckenridge, Canadian International Paper Co. Ltd., Gatineau Mills, Que.

PETERBOROUGH

Chairman: C. Bastable, Peterboro Lock Mfg. Company, Limited.
Secretary-Treasurer: S. R. Adamson, Canadian General Electric Co. Limited.

QUEBEC

Chairman: G. Demers, Georges Demers, C.E.
Secretary-Treasurer: J. R. Gauvin, C.G.A., R.I.A., Le Soliel Limitee.

REGINA - MOOSE JAW

Chairman: Walter T. Read, C.A., R.I.A., Read, Smith & Forbes, Chartered Accountants
Secretary-Treasurer: A. L. Heggie, General Films, Ltd.

ST. MAURICE VALLEY

Chairman: L. W. O'Connor, Canadian Industries Limited.
Secretary: R. Hebert, Canadian Resins and Chemicals Limited.

TORONTO

Chairman: C. J. Dutton, Luckett Loose Leaf Limited.
Secretary-Treasurer: L. J. Brooks, C.P.A., C.G.A., R.I.A., Public Accountant.

TROIS RIVIERES

Chairman: Gaston Baribeau, C.A., Baribeau, Diamond, Filion & Cie.
Secretary: G. E. Lavalle, Massicotte & Careau Limitee.

VANCOUVER

Chairman: C. H. Davis, R.I.A., Public Accountant, 3538 W. 34th Avenue.
Secretary-Treasurer: T. A. Kennedy, Pacific Coast Pipe Co.

VICTORIA

Chairman: Norman Smyth, Cost Inspection & Audit Division.
Secretary-Treasurer: Wm. Dron, Victoria Retail Lumber Co.

WINDSOR

Chairman: W. H. Gatfield, B.B.A., Western Ontario Broadcasting Co. Limited.
Secretary-Treasurer: F. R. Bear, B.S., Stokely-Van-Camp of Can. Limited, Essex.

WINNIPEG

Chairman: G. H. Elliott, R.I.A. Commonwealth Construction Co. Ltd.
Secretary: V. C. Nix, R.I.A., McFadyen Company Limited.